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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/602,230

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Qixiang Sun

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9988

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10/19/2004

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EXAMINER

ABELSON, RONALD B

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/602,230

Applicant(s)

SUN ET AL.

Examiner

Ronald Abelson

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-27 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 28-32 is/are rejected.
- 7) ☒ Claim(s) 6-13 and 33-40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2666

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2666

2. Claims 1 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art 'AAPA' in view of Sawyer (US 6,603,972).

Regarding claims 1 and 28, AAPA teaches a group-based multicast messaging system implementing dedicated logger member for logging all multicast messages sent in said system (pg. 1 line 26 - pg. 2 line 1), a method for reliably delivering messages from senders to receivers of said group;

A receiver detecting one or more missing messages from a sequence of multicast messages sent to members sent to members of the group (pg. 2 lines 1-2);

Soliciting retransmissions of missing messages to another member or logger of said group (asks these neighbors to repair missing messages, pg. 2 lines 15-17);

Enabling repair of missing messages by said another member in a first message recovery phase (asks these neighbors to repair missing messages, pg. 2 lines 15-17), wherein reliable delivery of messages in said multicast messaging system is ensured (provides reliable multicast, pg. 1 line 26 - pg. 2 line 1). Note, these messages can be 'fresh'.

AAPA is silent determining said receiver's missing messages as fresh or stale.

Art Unit: 2666

Sawyer teaches determining messages fresh or stale (col. 4 lines 49-57). Note, the examiner corresponds the applicant's fresh messages with the reference's delivered packets in real-time or close to real-time.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA by setting a timer at the sender upon transmission of a message and checking the timer upon receipt of a solicitation for retransmission of a missing message. Before the sender retransmits the timer would be checked to see if the message had gone stale. This would improve the system since if the message had gone stale, the sender would not retransmit in a real-time environment.

3. Claims 2-5 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA and Sawyer as applied to claims 1 and 28 above, and further in view of Van Renesse (US 6,724,770).

The combination is silent on detecting a missing message includes determining a gap in sequence numbers (fig. 6 box 602, col. 5 lines 49-57).

Van Renesse teaches each multicast message is assigned a sequence number (fig. 2, col. 3 lines 49-52) and detecting a

Art Unit: 2666

missing message includes determining a gap in sequence numbers (col. 19 lines 57-61).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Sawyer by having the transmitting device assign each packet a sequence number and having the receiving device check for sequential reception of the sequence numbers. This modification can be performed in software. This would improve the system by providing a method for determining a packet has not been received.

Regarding claims 3 and 30, said missing message status is determined by comparing a time difference between a current time and the time of actual sending of said message in said system against a fixed threshold (Sawyer: col. 4 lines 49-53), wherein when said time threshold has not been exceeded, assigning said fresh status / real-time or close to real-time, otherwise assigning said stale status to said missing message. Note in order to determine if the packet was delivered in real-time or close to real-time, the system must compare the difference between the current time and the time of actual sending of said message. If the delivery time is less than a fixed time threshold, the packet is real-time or close to real-time. If the

Art Unit: 2666

delivery time is greater than a fixed time threshold, the packet is stale.

Regarding claims 4 and 31, Van Renesse teaches generating a gossip message comprising a retransmission request of a missing message (fig. 3 box 306, col. 3 lines 17-20); randomly selecting a member of the group (fig. 3 box 306, col. 3 lines 17-20); sending said gossip message to said randomly selected member (fig. 3 box 306, col. 3 lines 21-24).

Regarding claims 5 and 32, Van Renesse teaches the gossip message comprises a negative gossip comprising a member's missing messages (identifies the lost message, col. 3 lines 21-24).

#### ***Allowable Subject Matter***

4. Claims 14-27 are allowed.

5. Claims 6-13 and 33-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2666

The following is a statement of reasons for the indication of allowable subject matter.

Regarding claim 14, although the combination of AAPA and Sawyer teaches repair of missing messages and the detection of fresh and stale messages, nothing in the prior art of the record teaches or fairly suggests a second phase repair mechanism for repair of missing stale messages, in combination with all the limitations listed in the claim.

Regarding claims 6 and 33, although Van Renesse teaches propagating sequence numbers in a gossip message (col. 5 lines 53-57, nothing in the prior art of the record teaches or fairly suggests the steps of collecting and propagating as taught in the claims, in combination with all the limitations listed in the claim.


### **Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

Art Unit: 2666

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ronald Abelson  
Examiner  
Art Unit 2666

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SUPERVISORY PATENT EXAMINER  
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10/18/07